

violently fractured: the same thing is observed in other mineral substances while undergoing particular chemical or molecular changes.

Of the phenomena described by the author as examples of phosphorescence in flowering plants, most, if not all, must be regarded as originating in electrical action; but the luminosity of certain Fungi rests upon a good foundation. The catalogue of luminous animals is a long one, and the chief points connected with them are well discussed by Dr. Phipson, in whose pages the reader will find an interesting account of a great number of curious phenomena.

In his theoretical view of the nature of phosphorescence, the author endeavours to bring all these multifarious phenomena under the same category; and here, we think, he is scarcely successful. At the base of his theory lies the correlation of the physical forces and their mutual convertibility; such a conversion of forces into light he assumes to take place in phosphorescent bodies, and thus thinks he has accounted for their phosphorescence. Thus the insolation of Bologna phosphorus, according to him, sets up certain vibrations (electric, chemical, or magnetic) in that body, which cease on its being removed into the dark, and, in ceasing, cause the emission of a proportionate amount of light. In like manner, on the application of heat to a body which emits light at a comparatively low temperature, we should have a certain amount of heat converted into light when a given point is reached. In these cases, such an hypothesis may certainly be the true one, but it is still far from explaining the phenomena; for a theory of phosphorescence ought at least to show some plausible reason why light is emitted under certain conditions by one body and not by others.

The luminosity of the Fungi is regarded by Dr. Phipson as due to chemical action; but, curiously enough, that of animals is ascribed to the conversion of nerve-force into light, although the luminous matter even of the higher forms of phosphoric animals (insects and Myriapods) will continue shining when smeared over other objects. Under these circumstances, and considering that decayed wood and putrescent animal matter are often luminous in the dark, we should prefer regarding the phosphorescence both of animals and plants as due to a chemical action, the subjection of which to the will in the former does not seem to present any special difficulty.

MISCELLANEOUS.

Notice of three Wombats in the Zoological Gardens.

By Dr. J. E. GRAY, F.R.S. &c.

THERE are at present in the Zoological Gardens in the Regent's Park three kinds of Wombats from Australia: two were sent from the Acclimatization Society of South Australia, at Victoria; but nothing is known of their peculiar habitat. They are evidently distinct from the common silver-grey Wombat, which we have long had alive.

Two of them are true *Phascolomys*, and have a blunt nose, with a distinct, bald, rugose, callous muzzle; and they have moderate-sized ears, which are usually bent back on the sides of the head.

They differ considerably in colour and in the form of the muzzle.

1. *Phascolomys ursinus*.

Dark silver-grey; middle of back, nose, and outside of limbs blacker; fur very dense, rather curled and crisp, consisting of abundance of under-fur and close-set, slender, very dark brown hair with slender silver-white tips, and a few interspersed white and fewer black, tapering, slender bristles; it has a subtrigonal muffle, pointed behind, and almost as long as broad. The ears are rounded at the tip.

This is the animal which is best known and usual in collections.

Hab. Van Diemen's Land.

2. *Phascolomys Angasii*.

The fur is blackish brown, nearly uniform; the muffle is oblong, transverse, rounded behind, and broader than long. The ears are rather pointed at the tip.

Hab. South Australia.

I have named this species after Mr. G. French Angas, who has paid so much attention to Australian and African zoology.

The third specimen is certainly a distinct genus, as distinct from *Phascolomys* as *Halmaturus* from *Macropus*, or *Ovibos* from *Bos*. It may be called

LASIORHINUS.

The nose is truncate and hairy, with large open nostrils on the sides, and without any naked muffle between them. The ears are large, produced, erect, acute, covered externally with short fur.

Lasiorhinus M'Coyi.

The fur is pale silver-grey, the hairs being black with silver-grey tips; the whiskers are long, strong, rigid, in a line on each side of the nose; the ears elongate, acute.

This animal seems to be the Broad-nosed Wombat (*P. latifrons*) of South Australia, described by Mr. G. F. Angas, in the 'Proceedings of the Zoological Society,' June 25, 1861, p. 268, from a specimen then living in the Botanic Garden in Adelaide, caught near the Sawler River, about thirty miles north of Adelaide.

It has just been figured as *Phascolomys lasiorhinus* by Mr. Gould in his 'Australian Mammals;' but this name is applicable to the genus.

I have named this species after Prof. M'Coy, the Director of the Melbourne Museum, who is forming a museum that is equalling, and, I may say, rivalling the museums of several European or American capitals.

Mr. Angas may possibly be correct in applying the specific name of *latifrons* to this species; and the characters that Professor Owen pointed out may prove to be generic: but this can only be deter-

mined when the skulls of these species can be compared with the typical skull described in the Proc. Zool. Soc. 1845, p. 82.

In the British Museum there is a very large specimen of a true *Phascolomys*, which, from the colour and rigidity of the fur, appears to be a third species. Unfortunately the skin is without any skull, and has no reliable habitat attributed to it, as it was purchased of Mr. Jamrach, in 1859, who received it from "Australia." It is very probably the "big yellow fellow," or Wombat, that the natives say is found on the banks of the Murray. (See Proc. Zool. Soc. 1861, p. 271.)

Phascolomys setosus.

Nearly uniform pale brown; the fur rigid, with a small quantity of under-fur on the shoulders and limbs, consisting almost entirely of dark brown bristles with pale tips, and rather more rigid black-brown longer bristles; the muffle subtrigonal, as long as broad.

Hab. Australia.

This is the specimen figured by Mr. Gould, in Part xi. of his 'Mammalia of Australia,' under the name of *Phascolomys latifrons*; but how he determined that it was the *P. latifrons* of Owen I do not know, as the only skin we have has no skull, and *P. latifrons* is only described from a skull. The different character of the fur is the best distinction. The young Tasmanian Wombat (*P. ursinus*) is dark, like the adult.

On the Occurrence of living Water-Beetles in the Intestines of the Common Trout.

To the Editors of the Annals and Magazine of Natural History.

Preston Rectory, Wellington, Salop,
May 21, 1863.

GENTLEMEN,—While examining the intestines of the common Trout (*Salmo fario*, Linn.) for *Echinorhynchi*, I was surprised to find, at the space of about half an inch from the anal orifice, two specimens of a small brown water-beetle, *alive and active*, amongst the contents of the intestine. I have not yet determined the species of beetle, nor do I at all know whether the discovery of a living non-parasitic animal in such a locality is a matter of ordinary occurrence. But in this case there is, it would seem, undoubted evidence of the power of an insect to survive unharmed the digestive process of a fish. The beetles had been swallowed by the trout with other food, and here they were quite lively and ready to be evacuated in a very short time.

That I have made no mistake in the matter is evident from the fact, that attached to the underside of one of the beetles was a quantity of mucus from the fish's intestine, in which were imbedded the proboscides of two or three specimens of *Echinorhynchus Proteus*. I have examined the stomach and intestines of various freshwater fish, but never before witnessed the occurrence of living forms of